2 Mapping Coherence and Cohesion Skills in Written Texts Produced by 9- to 12-Year-Old French-Speaking Learners: Indicators of Proficiency and Progress

Claudine Garcia-Debanc and Myriam Bras
Université Toulouse-Jean Jaurès, France

The present work is part of a crossed study of a large corpus of pupil texts (n= 400, 9-12 years old, 16 years old, students) triggered by a common instruction. It aims at establishing a cartography of indicators of textual competencies. In this chapter, we analyze 6 texts of 9 to 12 years old pupils responding to a sentence integration task: three sentences including pronominal anaphora and demonstrative noun phrases have to be integrated in a narrative text without modifications. The first results show that the integration of pronominal anaphors is easier than the integration of lexical expressions including a demonstrative determinant. The texts which succeed in integrating Demonstrative NP including lexical anaphora are the longest ones and have a title. Then, we study temporal structuration of the same 6 texts: we list the different verbal tenses used in each text, connectors and adverbial frames. These analyses show that the hierarchy of the texts from a coherence/ cohesion point of view correspond to the scholar levels: younger pupils use cohesion markers better than older ones. Then, we compare two texts written by pupils of the same scholar level. They show very different competencies on using cohesion markers. The methodology experimented here on a small number of texts will serve as a guide to a bigger annotation campaign on a large corpus of pupil texts (n = 400).

La présente étude constitue l'un des volets d'une analyse croisée d'un ensemble de textes d'élèves (400 textes rédigés par des élèves de 9 à 12 ans, de 16 ans et par des étudiants adultes), en réponse à une même consigne, en vue d'établir une cartographie des compétences textuelles de gestion de la cohésion. Nous analysons ici 6 textes d'élèves de 9 à 12 ans en réponse à une tâche-problème d'intégration dans un texte narratif de trois phrases comportant des anaphores pronominales ou des groupes nominaux avec des déterminants démonstratifs. Les marques linguistiques choisies par les élèves sont recensées. L'étude s'attache ensuite aux marques de cohésion temporelle à travers l'étude des temps verbaux, des adverbiaux cadratifs, des connecteurs et de la présence de subordonnées temporelles. Le faisceau de ces marques permet de hiérarchiser les divers textes analysés du point de vue de la cohésion textuelle. La méthodologie ainsi mise au point sur un échantillon limité de textes prépare une annotation d'une grande quantité de textes pour établir une cartographie d'indicateurs de complexité dans la gestion des marques de cohésion textuelle.

Learner texts have been studied by linguists and researchers in the teaching of French for about fifty years (Charolles 1978, 1988; Beguelin, 1988; Apotheloz, 1995; Masseron, 1981). These analyses, conducted within the tradition of the "grammar of errors" (Frei, 1929), aim to "seek the regularities underlying language errors" (Béguelin, 1988) and the "anomalies" indicative of the cognitive processes involved in oral and written production (Béguelin, 1992), in order to identify the production mechanisms involved in the encoding of written text (Béguelin, 1995). Deviations from the norm are thus interpreted not as errors but as traces of the writing process (Hayes and Flower, 1980; Schneuwly, 1988) and the gradual construction of writing skills. The mapping of indicators showing the implementation of the components of writing expertise is more advanced in the area of spelling (Geoffre, 2013, 2014) than in that of textual cohesion. The analysis of a sample of texts written by primary and secondary school students (Masseron, 1981, 2005; Garcia-Debanc, 2010, 2013; Roubaud, Garcia-Debanc, 2014) brought many textual cohesion problems to the fore: referential ambiguities, contradictions in reference chains, and too many inferences to be made by the reader to re-establish overall coherence.

This study is part of a broader project that aims to build large corpora of learner texts to map the acquisition of textual cohesion by French primary and secondary school students. At present, such corpora, considered here as "large" because they contain hundreds of texts produced in response to the

same writing instruction, although "small" compared with the corpora usually used in NLP, only exist for French as a Foreign Language (Granger, 2007, 2009) or English as a Foreign Language. They are beginning to be compiled for French as an Instruction Language (Elalouf et al., 2005; Elalouf, 2011; Leblay, Auriac, 2010; Gunnarson-Largy, Auriac-Slusarczyk et al., 2013). Their development appears essential to conduct precise studies to highlight the invariants and factors of progression in the establishment of indicators of textual competence and, as a second step, to outline possible teaching applications.

In the present study, we analyze the strategies used by 9- to 12-year-old students to handle temporal coherence and textual cohesion in anaphoric chains when carrying out a task of integrating sentences in a narrative. Charolles (1988) identified the cohesion markers that ensure textual continuity: verb tense and person, pronouns, lexical substitutes, etc. However, students at these levels of education have difficulty managing these ties cohesively in their own writing. We investigate here the resolution modes chosen by students aged 9 to 12, with a view to identifying their level of proficiency. By analyzing their erasures, we also searched for clues as to how young writers solve potential difficulties for the reader, in order to avoid costly inferential processing.

After a review of some landmark studies on this issue, we will discuss the methodology (the writing instruction and the processing of the student texts) and we will present an analysis of a sample of six texts by students (two per grade, i.e. the last three years of French primary school), considering first nominal anaphora and then temporal coherence.

1. Linguistic Markers of Textual Cohesion and Their Acquisition by Schoolchildren

1.1 Coherence and Cohesion

Ever since the seminal work by Halliday and Hasan (1976), textual cohesion has been defined as a set of cohesive ties between text elements. These ties are established when the interpretation of one element depends on another element in the text. Cohesive relationships within and between sentences are organized in a taxonomy of five types of relationship: reference, substitution, ellipsis, conjunction and lexical cohesion. We will focus here on anaphoric relations, whether temporal or not, and on conjunctive relations expressed either by connectives or by temporal adverbials.

Textual coherence is defined here from the viewpoint of comprehension: a coherent text is a text for which it is possible to build an interpretation. In theoretical frameworks such as Segmented Discourse Representation Theory,

or SDRT (Asher & Lascarides, 2003), a text is considered to be coherent if the contribution of each text segment can be linked to the contribution of another text segment in the discourse context. Coherence and cohesion are not equivalent properties; they act at different levels (semantic content vs explicit surface relations). Coherence can result from the existence of cohesive links (*Marie was sick, so she didn't go to work*), but can also hold without any cohesive ties (*Mary is sick, it's cold*). Conversely, the existence of cohesive ties between two segments does not necessarily entail the coherence of the whole (*Mary is sick but Albert has been learning to play the piano for two years.* Adapted from Charolles, 1995).

Coherence is expressed by coherence relationships between text segments. Here we will use SDRT coherence relations: Narration, Result, Explanation, and Background (Bras et al., 2009). We will consider that, when building the representation of a text, it is the possibility to attach the representation of any text segment to a segment representation already introduced in the whole text representation with one of these coherence relations that ensures the coherence of the whole text.

In this chapter, we will also make use of Kamp and Rohrer's (1983) analysis of tenses to treat narrative sequences. In their approach, tenses such as the French *Passé Simple* and *Passé Composé* can be considered as instructions to let the narrative proceed, while the *Imparfait* tense describes a state of affairs backgrounding the salient event of the narration represented by the reference point. This discourse semantics of tenses is close to the textual function of tenses developed by Benveniste (1974) and Weinrich (1974), that distinguishes between "story tenses" (*Imparfait, Passé Simple, Plus-que-parfait*) and "commentary tenses" (*Présent, Passé Composé, Futur*), and attributes a textual function to each tense in each system.

1.2. Textual Cohesion in Learner Texts

While a large number of studies have been carried out in linguistics and psycholinguistics on anaphora (Cornish, 1999) and the processes in understanding anaphora from the comprehension standpoint, work on cohesion in texts written by young students is scarce. Charolles (1988), in a study of the linguistic traces of writing processes, analyzed the language markers used by 10- to 13-year-old students (the last two years of French primary school and the first year of secondary school) to anticipate confusion in the identification of characters in a written narrative. The writing task proposed was based on a protocol used in psycholinguistic experiments (Bartlett 1984, cited by Charolles, 1988): students were presented with two versions of a comic

strip, one considered "easy" in which the three characters to be included in the story are differentiated (hair color, clothing), the other one "difficult" in that no visible signs distinguished the protagonists (Charolles 1988, p. 81). The study, which was both quantitative and qualitative, analyzed the distribution patterns of the characters' initial names and the ratio of contrastive constructions and drew up a typology of typical difficulties: contextualizing the scene, introducing dialogues, introducing proper names, confused anaphora, and ambiguities.

Similarly, Béguelin (1988) aimed to "seek the regularities underlying language errors." She analyzed argumentative anomalies (Béguelin, 1992) and co-reference errors in matrimonial advertisements and letters to the editor published in the press (Béguelin, 1988) and in texts written by schoolchildren and foreign university students (Béguelin, 1995). By analyzing these different corpora, Béguelin showed how these errors can be grouped into a typology which then allows didactic treatment. In particular, she demonstrated the importance of discursive memory for the interpretation of some occurrences of ambiguous anaphora or anaphora without textual references.

2. Methodology: Presentation of the Corpus Analyzed

2.1. Research Question

The present study aims to assess the problems encountered by primary school pupils with temporal cohesion and textual cohesion in a written narrative production task, and the language resources they mobilize to avoid costly inferential processing for their potential reader. To this end, we investigate the resolution modes chosen by the students and define indicators of proficiency in the management of textual cohesion. The convergence of various indicators of proficiency is examined at different levels of analysis: spelling, syntax, text segmentation into sentences, textual cohesion, particularly from the perspective of the management of anaphora and temporal expressions. The methodology designed for analyzing and testing a sample of texts will subsequently be applied to quantitative studies on the entire corpus.

2.2. Writing Instruction and *A Priori* Analysis of the Writing Task

The writing instruction proposed is based closely on the one used by Charolles (1988). However, while Charolles (1988), in the psycholinguistic tradition, chose a set of images from comics as the stimulus in order to avoid linguistic priming, we preferred to use a set of sentences, to see how some linguistic

markers are included by students in solving this task. To focus students' attention on textual cohesive ties, we designed a writing task, considering that the problems of textual cohesion that students have to solve to meet the target are, to some extent, of the same nature as those observed in their own writing. The task could be described as epilinguistic, since it draws students' attention to a dimension of the functioning of the language, without using linguistic terminology. The writing instruction was as follows:

> Racontez une histoire dans laquelle vous insèrerez séparément et dans l'ordre donné les trois phrases suivantes:[Tell a story in which you insert separately and in the order given the following three sentences]

> Elle habitait dans cette maison depuis longtemps. (P_a)

> [She had been living in this house for a long time]

> Il se retourna en entendant ce grand bruit. (P_b)

> [He turned round when he heard this loud noise]

> Depuis cette aventure, les enfants ne sortent plus la nuit. (P_c)

> [Since this adventure, children no longer go out at night]

To avoid any changes being made to the three sentences, they were printed on strips of paper that students could paste in wherever they wanted in the text. This method was chosen to avoid imposing the drafting of a given length of text, which would have been the case if the sentences had been separated by dots.

The proposed task leads students to manage cohesive ties by resolving several referential anaphora: personal pronouns (*she*, *it*), noun phrases with an anaphoric demonstrative (*this house*, *this loud noise*, *this adventure*), and noun (*children*). However, the writing instruction gives no indication about the characters, who may be a witch, a mother or a daughter, an adult or a child. Similarly, the choice of narrative genre is left quite open. It is indicated by the closing sentence with the words *night* and *adventure*, which may be considered as the moral of the tale, suggesting danger and fear. These linguistic elements are thus both linguistic constraints to be taken into consideration and elements that trigger the writing process, sparking the imagination. Thus the last sentence is important for text planning (Hayes & Flower, 1980), insofar as it constrains the time frame of the key episode of the story (the night), and creates the general atmosphere: if the children no longer go out at night, it is because one or several of them have experienced terrifying and dangerous

adventures at night. Writers must also decide if the *children* mentioned in the last sentence is a generic term referring to the characters previously designated by *she* or *he* or if it refers to only one of them and consider that this moral is a generalization from the adventure of only one child. Furthermore, the use of tenses, the French *Imparfait* in the first sentence, the French *Passé Simple* in the second sentence and the present as a general truth in the third sentence, induces the *Passé Simple / Imparfait* opposition in French, while the present of the final sentence is justified by the generic nature of the moral. The writer must also take into account the spatial and temporal information present in the writing instruction: *in this house*, *for a long time*, *at night*. Despite these constraints, the writing instruction is open, since it allows a wide variety of solutions concerning the genre of the story and the type of characters. Indeed, the writing instruction does not indicate whether the final text is an adventure story, a news story, a fairy tale or a fantasy story. All these possibilities are permitted by the writing instruction.

Analysis of the task also reveals the need for backward planning (Schneuwly, 1988): the final sentence induces the construction of a story that requires the presence of children, appears as an "adventure" and puts an end to nighttime excursions, probably due to a frightening scene.

For each occurrence of an anaphoric marker in the sentences of the writing instruction, writers have to clarify the reference by inserting additional sentences before the occurrence. However, the distance between an anaphoric term and a reference-source can vary. The resolution can be achieved by making local ties between successive sentences or may require a greater distance between them.

2.3. Corpus

The complete corpus comprises 400 texts by 9- to 16-year-old students (third to last year of primary school and first and last years of lower secondary school) and 40 texts by master's students (students training to become primary school teachers and students training to become writers). These texts and manuscripts are being transcribed.

Given the limited space available, we will compare a small sample of six student texts, two per grade level.

2.4. Text Processing Methodology

The texts were transcribed respecting the original spelling and spatial organization used by the students. Strikeouts were transcribed according to the

conventions of the ITEM (Fabre-Cols, 2002). The three sentences given in the writing instruction were written in italics.

We performed a word count, excluding the words in the sentences of the writing instructions. In the event of segmentation problems, we counted the words according to standard spelling (*sapeler* = *s'appelait* = 2 words).

The text was then segmented using semantico-referential criteria following the segmentation rules of the ANNODIS project (Muller et al., 2012): a minimal segment (Elementary Discourse Unit, henceforth EDU) describes an event or a state of affairs, described by a clause, be it finite or not, independent or not, elliptical or not. Some elements, such as frame introducers or frame adverbials (Charolles, 1997) were segmented because they have a discursive autonomy (Vieu et al., 2005). We give below the texts segmented along these lines, regardless of the punctuation or syntactic segmentation used by the students. Following these rules, two of the sentences to be integrated in the texts, P_b and P_c, must also be segmented into EDUs. We segmented them, while grouping them into a complex segment corresponding to the sentence to be introduced, to allow easier reference to these sentences in our analysis:

[[Il se retourna] [en entendant ce grand bruit.]]

[[He turned round] [when he heard this loud noise.]]

[[Depuis cette aventure,] [les enfants ne sortent plus la nuit.]]

[[Since this adventure] [children no longer go out at night.]]

Text 1: text by Joanne (3rd yr Primary)

(1) [Il étaie une fois une petite fille]$_1$ [elle sapeler ~~lisa~~ liza]$_2$ [elle aitai trai janti]$_3$ [*Elle habitait dans cette maison depuis longtemps.*]$_{4=a}$ [elle avais des jantil voizain]$_5$ ~~et ses voizain~~ [[*Il se retourna*] [*en entendant ce grand bruit.*]]$_{6=b}$ [C'aitai un arbre qui tonbaie]$_7$ [[*Depuis cette aventure,*] [*les enfants ne sortent plus la nuit.*]]$_{8=c}$

(1) [Once upon a time there was a little girl]$_1$ [her name was ~~lisa~~ liza]$_2$ [she was very nice]$_3$ [She had been living in this house for a long time.]$_{4=a}$ [she had nice neighbors]$_5$ ~~and her neighbor~~ [[He turned] [when he heard this loud noise.]]$_{6=b}$ [It was a tree that was falling]$_7$ [[Since this adventure] [children no longer go out at night.]]$_{8=c}$

Text 2: text by Clara (3rd yr Primary)

(2) [L'étrange voisine en Bretagne]$_1$

[Il était une fois, une petite fille qui s'appelait Lola.]$_2$ [Elle avait deux frère, Nicolas et Jérôme.]$_3$ [Maintenant ils avait l'âge de vivre seule:]$_4$ [Lola alla habiter en Bretagne,]$_5$ [car elle aimait cette région.]$_6$ [Elle n'avait encore pas beaucoup d'argents]$_7$ [et n'avait pas asser de sous]$_8$ [pour s'acheter un habita.]$_9$ [elle pouvait que s'acheter une cavane à ~~la~~ l'orée d'un bois.]$_{10}$ [Elle avait une voisine très mistérieuse.]$_{11}$ [~~Elle~~ La voisine avait une maison anciene.]$_{12}$

[Elle habitait dans cette maison depuis longtemps.]$_{13=a}$

[Un jour,]$_{14}$ [la voisine mistérieuse invita Lola pour mieux la connaître.]$_{15}$ [Lola rêvait que ses frère vienne en Bretagne.]$_{16}$ [La vieille voisine lui proposa de louer sa maison gratuitement.]$_{17}$

[- Vraiment! Gratuitement! Merci!]$_{18}$ [Mes frère vous remercient.]$_{19}$ [~~Je vous~~ l suis d'accord!]$_{20}$

[Donc, un mois après]$_{21}$ [elle invita ses deux frère dans la chaumière de la voisine.]$_{22}$ [Ils était d'accort.]$_{23}$ [Une nuit]$_{24}$ [Jérôme n'arriva pas à dormir]$_{25}$ [la maison de cette vieille femme était étrange.]$_{26}$ [Tout d'un coup]$_{27}$ [[*Il se retourna*] [*en entendant un grand bruit.*]]$_{28=b}$ [Un bruit très bizarre comme "SCRABATOIMADOU!"]$_{29}$ [Car aucun objets ne pouvait faire se son en tombant.]$_{30}$ [Nicolas entandit le bruit]$_{31}$ [il alla reiveiller Lola.]$_{32}$ [Tout deux coururrent retrouver Jérôme.]$_{33}$ [A leur surprise il avait disparut!]$_{34}$ [Ils sont rentrer dans un grand chagrin,]$_{35}$ [quand plus vite que l'éclaire la vieille voisine était là.]$_{36}$ [C'était une sorcière]$_{37}$ [et dit:]$_{38}$

[- J'adore me nourrir des pleurs et des peurs infernales!]$_{39}$

[- Ou est Jérôme!]$_{40}$ [crie Lola.]$_{41}$

[- Ah, Ah vous ne le serez jamais!]$_{42}$

[Ils l'on chercher pendant deux jours;]$_{43}$ [Le deusième jours]$_{44}$ [ils le retrouva ligoter dans un placartd.]$_{45}$

[- C'est une méchante sorcière!]$_{46}$ [leur dit Jérôme.]$_{47}$

[- On sait,]₄₈ [et c'est elle qui t'à ligoter?]₄₉

[- Non,]₅₀ [cesont trois yéti horiblement méchant.]₅₁ [dit Jérôme.]₅₂ [Lola voulu tout de suite déménager à Toulouse.]₅₃ [Là aussi elle a une voisine;]₅₄ [mais le jour ou elle à voulu l'inviter,]₅₅ [la voisine s'est contenter d'un grand et fort "Non!!!!!!!"]₅₆

[[- Depuis cette aventure,] [les enfants ne sortent plus la nuit.]]₅₇₌c

[- Car ils avait bien trop peur de rencontrer la sorcière et ses trois yétis.]₅₈

(2) [The strange neighbor in Brittany]₁

[(Once upon) a time (there was) a little girl called Lola.]₂ [She had two brothers, Nicolas and Jerôme.]₃ [Now they were old enough to live alone:]₄ [Lola went to live in Brittany,]₅ [for she loved this region] ₆ [She had not much money] ₇ [she had not enough money] ₈ [to buy a home.]₉ [she could only buy a caravan on the edge of a wood.]₁₀ [she had a very mysterious neighbor.]₁₁ [~~She~~ The neighbor had an old house.]₁₂

[She had been living in this house for a long time]₁₃₌a

[One day,]₁₄ [the mysterious neighbor asked Lola in to get to know her better.]₁₅ [Lola was longing for her brothers to come to Brittany.]₁₆ [The old neighbor offered to rent her house for free.]₁₇ [- Really! For free! Thank you!] ₁₈ [My brothers thank you.] ₁₉ [I agree!] ₂₀ [So, a month later] ₂₁ [she invited her two brothers to the neighbor's cottage.] ₂₂ [They agreed.] ₂₃ [One night] ₂₄ [Jerome couldn't fall asleep] ₂₅ [the house of this old woman was strange.] ₂₆ [suddenly] ₂₇ *[He turned round when he heard this loud noise]*₂₈₌b [A very strange sound like "SCRABATOIMADOU! "]₂₉ [For nothing could make this sound when falling.]₃₀ [Nicolas heard the sound]₃₁ [he went to wake Lola.]₃₂ [Both ran back to Jerome.]₃₃ [To their surprise, he was gone!]₃₄ [They returned to the house in great sorrow,]₃₅ [faster than lightning, the old neighbor was there]₃₆ [She was a witch]₃₇ [and she said.]₃₈

[- I love to feed on tears and infernal fears!]$_{39}$

[- Where is Jerome!]$_{40}$ [Lola yells.]$_{41}$

[- Ah, Ah, you'll never know!]$_{42}$

[They searched for two days;]$_{43}$ [the second day]$_{44}$ [they found him tied up in a closet.]$_{45}$

[- She's a wicked witch!]$_{46}$ [Jerome said.]$_{47}$ [- We know,]$_{48}$ [and she tied you up?]$_{49}$ [- No,]$_{50}$ [it was three horribly evil yetis.]$_{51}$ [Jerome said.]$_{52}$ [Lola immediately wanted to move to Toulouse.]$_{53}$ [Again she has a neighbor;]$_{54}$ [but on the day she wanted to invite him,]$_{55}$ [the neighbor merely shouted a loud "no!!!!!!! "]$_{56}$ *[[Since this adventure] [children no longer go out at night.]]*$_{57 = c}$ [Because they were too afraid to meet the witch and her three yetis.]$_{58}$

Text 3: text by Karim (4th yr Primary)

(3) [Marie Gorge et Merlin.]$_{I}$

[Elle habitait dans cette maison depuis longtemps.]$_{2=a}$

[La nuit tomba]$_{3}$ [et puis Gorge se leva]$_{4}$ [[et

[Il se retourna] [en entendant ce grand bruit.]]$_{5=b}$

[Il enfile son manteau]$_{6}$ [et sort de la maison,]$_{7}$ [il vat regondre]$_{8}$ [c'est un copin dans la foruit.$_{9}$ [soudain ils entandis des bruits terifiant,]$_{10}$ [Gorge se demanda]$_{11}$ [o que se que sait]$_{12}$ [c'est peutaitre un mostre]$_{13}$ [se dit Emilie.]$_{14}$ [Basqual dit]$_{15}$ ["a sait pas vrai]$_{16}$ [c'est peutaitre une chouete"]$_{17}$ [Le monstre comensa a parler]$_{18}$ ["e non se nait pas une chouette"]$_{19}$ [Gorge et Balsqua puis Emili il couurent]$_{20}$ [irentra vite chez eux.]$_{21}$ [H raconta cette histoire a leur parent]$_{22}$ [et

[Depuis cette aventure,] [les enfants ne sortent plus la nuit.]]$_{23=c}$

(3) [Marie Gorge and Merlin.]$_{I}$

[She had been living in this house for a long time]$_{2=a}$

[Night fell]$_{3}$ [and then Gorge get up]$_{4}$ [[and

[He turned round when he heard this loud noise]$_{5 = b}$

[He puts on his coat]$_6$ [and goes out of the house]$_7$ [he goes to meet]$_8$ [it's a friend in the forest]$_9$ [suddenly they heard terrifying noises]$_{10}$ [Gorge wondered]$_{11}$ [what is it?]$_{12}$ [perhaps it is a monster]$_{13}$ [Emilie said.]$_{14}$ [Basqual said]$_{15}$ ["it is not true]$_{16}$ [it might be an owl. "]$_{17}$ [The monster started talking]$_{18}$ ["no it's not an owl."]$_{19}$ [Balsqua and Gorge and then Emili they ran]$_{20}$ [they went home quickly.]$_{21}$ [H̶e̶ HE told this story to their parents]$_{22}$ [and

[Since this adventure, children no longer go out at night]]$_{23=c}$

Text 4: text by Rebecca (4th yr Primary)

(4) [La bergère.]$_1$

[Il était une fois une petite bergère qui vivaient prés des bois.]$_2$ [Elle avait une toute petite maison.]$_3$

[Elle habitait dans cette maison depuis longtemps.]$_{4=a}$

[Elle avait huit enfants]$_5$ [elle en prenai bien soin.]$_6$ [Le plus jeune fesai le plus de bétise;]$_7$ [La petite bèrgère envoyer ses sept s'autres enfants à l'école]$_8$ [et elle restai s'occuper du bebe]$_9$ [au fur et à mesure des années]$_{10}$ [l'enfant grandi]$_{11}$ [au débu à sa naissance]$_{12}$ [elle voulut l'appler Perssée]$_{13}$ [mais à l'âge de huit ans]$_{14}$ [le petit garnement désida de s'appeler Mohamed]$_{15}$ [sa mère accespeta.]$_{16}$ [Mais il ne savait pas qu'un voleur d'enfant]$_{17}$ [la bergère protégét ses sept enfant]$_{18}$ [le plus jeune se fis avoir]$_{19}$ [le fais tout pour l'atraper]$_{20}$ [et il entendu un brui]$_{21}$

[[Il se retourna] [en entendant ce grand bruit.]]$_{22=b}$

[Le père de Mohamed tua le voleur]$_{23}$ [les sept enfant se fis capturer]$_{24}$ [le père les sauva]$_{25}$ [un fentôme supreme surgi]$_{26}$ [il le tue]$_{27}$ [et les enfant désidère de]$_{28}$

[[Depuis cette aventure,] [les enfants ne sortent plus la nuit.]]$_{29=c}$

(4) [The shepherdess.]$_1$

[Once upon a time there was a little shepherdess who lived

near the woods.] ₂ [She had a very small house.] ₃

[She had been living in this house for a long time.]₄₌ₐ

[She had eight children] ₅ [she looked after them well.] ₆
[The youngest was the most unruly] ₇ [The little shepherdess
sent her seven other children to school] ₈ [and she was left to
look after the baby] ₉ [Over the years] ₁₀ [the child grew up] ₁₁
[early in his birth] ₁₂ [she wanted to call him Perssd] ₁₃ [but at
the age of eight years] ₁₄ [the little rascal decided to be called
Mohammed] ₁₅ [his mother agreed.] ₁₆ [but he did not know
that a child-snatcher] ₁₇ [the shepherdess protected her seven
children] ₁₈ [the youngest was caught] ₁₉ [he does everything
to catch him] ₂₀ [and he heard a noise] ₂₁

[He turned round] [when he heard this loud noise]₂₂₌ᵦ

[Mohamed's father killed the thief]₂₃ [the seven children
were captured] ₂₄ [the father saved them] ₂₅ [a supreme ghost
arises] ₂₆ [he kills it] ₂₇ [and the children decided

[[Since this adventure], [children no longer go out at
night]]₂₉₌ᵪ

Text 5: text by Lucie (5th yr Primary)

(5) [La fillette et le bandit]₁

[Il était une fois une fillette de 11 ans qui vivait avec sa mère
dans une petite maison à la lisière d'une forêt.]₂ [*Elle habitait
dans cette maison depuis longtemps*.]₃₌ₐ

[La fillette aimait beaucoup aller se balader dans la forêt.]₄
[Mais sa mère avait très peur de cette forêt]₅ [car on la surno-
mait "La forêt du bandit."]₆

[Une nuit,]₇ [comme sa mère refusait toujours aussi
catégoriquement de la laisser aller dans la forêt,]₈ [la petite
fille sortit pour aller dans la forêt.]₉ [Elle se baladait tran-
quillement]₁₀ [quand elle entendit un fin bruit de pas.]₁₁ [Elle
regarda derrière elle]₁₂ [mais ne vit rien.]₁₃ [Le bruit s'était ar-
rêter.]₁₄ [Soudain,]₁₅ [un jeune homme vêtu de noir et armé
d'un pistolet apparu devant elle.]₁₆ [Elle se mit à courir à
toute vitesse.]₁₇ [L'homme s'arrêta]₁₈ [car la fillette avait dis-

paru de son champ de vision.]₁₉ [La petite fille jeta un gros caillou dans la rivière.]₂₀

[[*Il se retourna*] [*en entendant ce grand bruit.*]]₂₁₌b [Le temps que l'homme sorte de sa torpeur,]₂₂ [la petite fille courut chez elle]₂₃ [et se couchat rapidement.]₂₄

[[Depuis cette aventure,] [les enfants ne sortent plus la nuit.]]₂₅₌c

(5) [The girl and the bandit]₁

[Once upon a time there was a 11-year-old girl who lived with her mother in a small house on the edge of a forest.]₂

[She had been living in this house for a long time.]₃₌a

[The girl loved wandering around the forest.]₄ [But her mother was very scared of this forest]₅

[because it was nicknamed "The bandit's forest ."]₆

[One night]₇ [as her mother always refused categorically to let her go in the forest]₈ [the little girl went out into the forest.]₉ [She was walking quietly]₁₀ [when she heard a light footstep.]₁₁ [She looked behind her]₁₂ [but saw nothing.]₁₃ [The noise had stopped.]₁₄ [Suddenly]₁₅ [a young man dressed in black and armed with a gun appeared in front of her.]₁₆ [She ran away at full speed.]₁₇ [The man stopped]₁₈ [because the girl had disappeared from his field of vision.]₁₉ [The girl threw a big stone into the river.]₂₀

[*He turned round*] [*when he heard this loud noise.*] ₂₁₌b [By the time the man wakes up,]₂₂ [the little girl ran to her home]₂₃ [and went to bed quickly.]₂₄

[Since this adventure], [children no longer go out at night.]₂₅₌c

Text 6: text by Yassim (5ᵗʰ yr Primary)

(6) [Il était une fois une ~~petite~~ fille qui ~~s'appeller~~ appellait Laura]₁ [qui voulez se rendre ~~allez~~ à The Voice pour chanter.]₂

[Sur le chemin,]₃ [elle voit son ancinne maison. ~~ou elle habi=tait.~~]₄

[Elle habitait dans cette maison depuis longtemps.]$_{5=a}$

[Elle entandit un bruit]$_6$ [elle se retourna ~~tou~~]$_7$ [c'été tout simplement un voiture qui venait de faire un accident.]$_8$ [Son papa qui l'accompagnier eu très peur.]$_9$ [[*Elle se retourna*] [*en entendant ce grand bruit*.]]$_{10=b}$

[Puis arriver à The Voice pour chanter devant le public;]$_{11}$ [Auretour]$_{12}$ [son père lui fait vraiment peur.]$_{13}$ [Elle lui pardonneras plus jamais.]$_{14}$ [Sur le chemain du retour,]$_{15}$ [elle lui parle pas]$_{16}$ [dès est arriver chez ~~elle pour sortir~~]$_{17}$ [Elle lui demande aux enfants de sortir.]$_{18}$

[Le ~~coucher du soleil~~ soleil se couche]$_{19}$ [et ils sont au plein milieu d'une forêt]$_{20}$ [et un loup-garou arrive.]$_{21}$ [Les enfants et Laura sont arriver à la maison vivant.]$_{22}$

[[Depuis cette aventure,] [les enfants ne sortent plus la nuit.]]$_{23=c}$

(6) [Once upon a time there was a ~~little~~ girl who was called Laura]$_1$ [who wanted to go to The Voice to sing.]$_2$ [On the way]$_3$ [she sees the former house where she lived previously.]$_4$

[She had been living in this house for a long time.]$_{5=a}$

[She heard a noise]$_6$ [she turned round]$_7$ [it was just a car that had caused an accident.]$_8$ [Her dad who accompanied her was very frightened.]$_9$ [[*She turned round*] [*when she heard this loud noise.*]]$_{10=b}$

[Then they got to The Voice to sing in front of the audience]$_{11}$ [On the way back home]$_{12}$ [her father really scares her.]$_{13}$ [She will never forgive him.]$_{14}$ [On the way back,]$_{15}$ [she does not speak with him]$_{16}$ [as soon as she arrived home]$_{17}$ [She asks the children to go out.]$_{18}$ [The ~~sunset~~ sun sets]$_{19}$ [and they are in the middle of a forest]$_{20}$ [and a werewolf arrives.]$_{21}$ [The children and Laura arrived at home alive.]$_{22}$

[[Since this adventure], [children no longer go out at night.]]$_{23=c}$

We can see that these texts differ considerably in length, both in terms of

word count and of number of segments (EDU), even within the same grade level: thus, the two texts written by third-year primary school pupils contain respectively 26 and 346 words, and 5 and 54 segments. These differences reveal a great diversity of skills for the same grade level. Note that the shortest text and the longest one are both written by third-year primary school students (9 years old).

3. Linguistic Markers Used by Students for Anaphora Resolution

Following Charolles (2002) and Corblin (1987), we will consider successively the linguistic markers used for the resolution of pronominal anaphora (*he*, *she*) within the six texts, those corresponding to demonstrative NPs (*this house*, *this loud noise*), and lastly the integration of the elements of the final sentence.

3.1. Pronominal Anaphora Resolution (*He, She*) in the Six Texts of the Study Corpus

The resolution of anaphoric ambiguity is involved in the construction of the characters (Tauveron, 1995). It should be mentioned that nothing in the writing instructions constrained the students to produce a particular textual genre.

The solutions proposed by students may differ in the nature and volume of information given about the character before the sentence to be integrated, the linguistic markers used for the first mention of the character, and the reference chain in which the given pronoun fits.

In texts 1 (3ʳᵈ yr Primary) and 6 (5ᵗʰ yr Primary), the same strategy is used to introduce the character: a noun phrase, a brief characterization of the character and a first name (Schnedecker, 1997):

> Text 1 (3ʳᵈ yr Primary):
>
> Il étaie une fois une petite fille elle sapeler ~~lisa~~ liza a elle aitai trai janti
> Once upon a time there was was a little girl her name was liza she was very nice

> **Text 6 (5ᵗʰ yr Primary):**
>
> Il était une fois une ~~petite~~ fille qui ~~s'appeller~~ appellait Laura
>
> Once upon a time there was a girl named Laura

In texts 4 and 5, the character is not given a proper name, only a charac-

terization by age or social function:

Text 4 (4th yr Primary):

[Il était une fois une petite bergère qui vivaient prés des bois.]$_2$ [Elle avait une toute petite maison.]$_3$

Once upon a time there was a little shepherdess who lived near the wood. She had a very small house.

Text 5 (5th yr Primary):

[Il était une fois une fillette de 11 ans qui vivait avec sa mère dans une petite maison à la lisière d'une forêt.]$_2$

Once upon a time there was a 11-year-old girl who lived with her mother in a small house on the edge of a forest.

It is interesting to note here both the structural parallelism—*Once upon a time there was* and a noun phrase with an indefinite article (*a little shepherdess*, *a girl*)—and an expansion in the form of a relative subordinate clause (*who lived near the woods*, *who lived with her mother*). Note also that the first mention of the house is accompanied by an expansion of the name (*a small house*, *a small house on the edge of a forest*).

Among the six selected texts, text 3 (4th yr P) is the only one that does not introduce a female character: it places P$_a$ as the first sentence in the text, which is common in a novel but is not necessarily tolerated by writing norms at school. The status of the three names written at the beginning of the text is unclear: it does not seem to be a title. However, we may consider that the female name *Mary* corresponds to this character. However, in the following text a character named *Emily* appears. So here we see an ambiguity about the name of the character corresponding to the pronoun *she*.

Texts 2 and 5 are characterized by the presence of two female characters who can both be referred to by the personal pronoun *she*. In text 5, topicalization dispels any ambiguity, making it easy to choose *the girl* and not *the mother*, but the situation is more complex in text 2 in which two female characters are successively brought in: a girl called *Lola* and her mysterious neighbor. Lola is the theme of segments 3 and (4-11), but the thematization of segment 12 unambiguously selects *neighbor*, on the criterion of proximity. Moreover, the title, *The strange neighbor in Brittany*, already thematizes this character in relation to the main character, Lola. The referential chain corresponding to this second character contains, in turn, *a very mysterious neighbor* (segment 11), *the neighbor* (12), *the mysterious neighbor* (15), *the old woman* (26), *the old neigh-*

bor (36), *a witch* (37), *a wicked witch* (46), and *she* (49). The identification of the character as a witch is performed first by the narrator (segment 37: *she was a witch*) and in the dialogue, by the character named Jerome (*she is a wicked witch*: segment 46). The gradual revelation of the evil nature of the neighbor is an important element of the plot. The implicit moral of the story is to beware of neighbors (segments 54 to 56).

The strategies used to introduce the pronoun *he* as a male character are quite similar. Identification can be realized by proximity, as in texts 2, 3, 4 and 6. The characterization of the character picked up by the personal pronoun *he* is very basic: it operates by a proper name. The absence of punctuation to delimit clauses sometimes complicates the reading. The lack of mastery of punctuation marks may also explain why the boundaries of the sentence to be integrated are not respected in texts 2 and 3, because of the presence of a textual time organizer *suddenly* before the second sentence of the writing task in text 2 (segment 24) and the presence of connector *and* twice in text 3 (segments 5 and 23).

In text 1, there is no male character who could be the potential referent of *he*, unless the antecedent is *a neighbor*. In this case, there is an error as the noun is plural, while the pronoun is a singular form: *nice neighbors/he*.

The most complex case is found in text 5. This text involves two characters, the female character (the girl transgressing her mother's prohibition) and the bandit. Referential expressions that precede and follow the personal pronoun *he* match the perspective of the female character when the bandit appears in the wood: *a young man dressed in black and armed with a pistol* (segment 16), *the man* (2 occurrences: segments 18 and 22). But the character has already been introduced in the title (*the girl and the bandit*) and in the name of the forest, *the bandit's forest*, which motivates the mother's prohibition.

The referential anaphora with a personal pronoun are generally correctly resolved. Only two major problems were noted in texts 1 and 3.

Anaphora resolution in the case of the use of demonstrative NPs (*this house*, *this loud noise*) is more difficult.

3.2. Anaphora Resolution in a Demonstrative SN (*this house, this loud noise*)

In texts 1 and 3, no referent is mentioned prior to the NP *this house*. In texts 4 and 5, *this house* is announced by a noun phrase in the preceding sentence: *a small house* (Text 4), *a little house on the edge of a forest* (text 5). Less than 10 words are used to define the discourse object.

In text 2, on the contrary, many segments are devoted to the house of

the main character (segments 5-10), a caravan on the edge of a wood, before resolving the anaphora *this house* by attributing *an old house* to the neighbor. This referent is gradually clarified with the NP *the cottage* (segment 22). Can one discern here the trace of the gradual development of the textual world: Lola's recent arrival in Brittany precludes the use of the temporal expression (*a long time*), so the house is attributed to a more sedentary, older character? The caravan is not mentioned in the rest of the story, except to explain the lack of room to accommodate her brothers (segments 17 and 19) and to justify their immediate removal from Brittany to Toulouse (53).

Therefore, the strategies for resolving *this house* do not differ much from those discussed in the previous section: the reference is usually clarified by the presence of a textual segment placed in the immediately preceding sentence.

This procedure is much less frequently used for *this loud noise*. We have excluded text 2 from our study, as the teacher mistakenly wrote *a loud noise* instead of *this loud noise*: in this case the presence of the indefinite article does not require an earlier mention of *noise*.

In text 1, an explanatory clause follows the sentence to be introduced: *it was a tree falling*. This strategy is dominant throughout the entire corpus of texts. In texts 4 and 6, the occurrence is preceded by an NP including an indefinite article *a noise* without any specification as to the type of noise. It is only in text 5 that the source of the noise is specified: *the girl threw a big stone into the river* (segment 20). It can be pointed out that in text 5 there is a double mention of a previous alert heard by the character: *a light footstep* (11), *the noise had stopped* (14), as if the student had fumbled in the search for a solution to the problem of anaphoric resolution.

3.3. Overview of Results on Anaphora Resolution

Table 2.1 shows that the integration of pronouns is more successful than that of referential demonstrative NPs. It also shows that the texts that manage to ensure the resolution of anaphoric markers are longer and have a title.

Table 2.1: Overview of markers used to solve anaphoras

	Text 1	Text 2	Text 3	Text 4	Text 5	Text 6	
Number of Words	26	346	112	145	178	133	Average 156
Number of Segments	5	54	20	26	22	20	Average 24
Title	-	+	?	+	+	-	3

	Text 1	Text 2	Text 3	Text 4	Text 5	Text 6	
Resolution of *elle*	+ NP + first name + characterization	+ NP with characterization	? ? First name	+ NP	+ NP	+ NP + first name	5
Resolution of *il*	–	+ first name	+ first name	+ NP	+ NP with expansion	– (*elle* instead of *il*)	4
Resolution of *cette maison*	–	+ NP with expansion	–	+ NP with expansion	+ NP with expansion	– contradiction	3
ce grand bruit	? (cataphora)	/	–	+ un bruit	+ + la petite fille jeta un gros caillou dans la rivi.ng	+ elle entendit un bruit	3
la nuit	–	+	+	–	+	+	4
les enfants	?	?	?	+	+	+	3
Number of +	1	5	2	6	7	4	

4. Temporal Coherence

Analyzing the limited sample of students chosen for this chapter will lead us to list a set of criteria to measure the degree of proficiency acquired in the production of temporally coherent texts. We will first compare two 3rd-year primary school texts which are very different from this point of view. Then, based on the criteria resulting from this initial analysis, we will examine the whole sample of 6 texts.

4.1 Contrastive Analysis of the Two 3rd yr Primary Texts

An initial survey of texts (1) and (2) reveals a very different distribution of temporal cohesion markers:

- Use of only one tense in (1), the imparfait vs. use of a range of six tenses in (2): imparfait, passé simple, plus-que-parfait, présent, passé composé, future.
- No connector or temporal subordinating clause in (1) vs. use of causal or contrastive connectors in (2): *donc, car* (2 times), *mais,* and presence of a subordinating clause introduced by *quand* which proves to be a "quand inverse" clause where *quand* plays the role of a temporal connector linking segments 35 and 36.
- No temporal adverbial in (1) vs. presence, in (2), of temporal framing adverbials as defined by Charolles (1997), i.e. temporal adverbials in sentence initial position, whose scope may extend beyond their host sentence, in segments 14, 21, 24, 27, 44 (Bras et al., 2001).

The author of (1) adopts a minimalist strategy: he uses only one temporal marker to produce a text which is, nevertheless, not that incoherent from the temporal viewpoint. The *imparfait* is used in the right way to describe the initial background in segments 1-5, including P_a, which are thus correctly attached to their left context. The use of the *imparfait*, in 7, allows the establishment of a coherence relation, the explanation relation, between the state of affairs described in 7 and the event described in 6 (P_b). But it is the lack of ties between P_b and its left context that results in an incoherent text. This lack of ties was already observed above in section 3 for pronominal and nominal anaphora resolution: from the semantico-temporal perspective, the introduction of at least one event, described using either the *passé simple* or the passé *composé*, is expected. The event described in P_b would then be a reaction to this event.

The author of (2) perfectly succeeds in inserting P_a and P_b in their contexts, thanks to the command of a richer range of markers:

- As far as tenses are concerned, we note a good command of past tenses: of the *passé simple* in narrative parts (and of the *passé composé* in 43), which enables the narration to move forward; of the *imparfait* which supports backgrounding or explanations in descriptive parts; and the *plus-que-parfait* (in 34). The *present* and the *passé composé* in 54-56 are also used properly, in order to bring the reference point back to the present and prepare the insertion of P_c. Nevertheless, there are a few flaws: the last segment, 58, is in the *imparfait*, whereas a *present* is expected; in the segments 35-36, the *imparfait / passé simple* (or *passé composé*) pair, usually used in cases of inverse subordination with *quand* (cf. j'étais tranquillement allongé dans l'herbe quand la sirène retentit), here for example *They returned to the house in great sorrow, when faster*

> *than lightning, the old neighbor was there.*

- Text (2) is well structured; it can be seen in particular that:
  - It gives some initial background information (2-4), which is the description of the story protagonists, then it gives an event description in 5, followed by an explanation in 6,
  - P$_a$ closes the description of the second background (7-13),
  - The move to the "problem step" is marked by the framing adverbial *un jour* (segment 14), which has scope over the segment (15-20). It is followed by two other segments also introduced by frame adverbials *un mois après* (segment 21, scoping over (22-23)), *une nuit* (segment 24, scoping over (25,26)), *tout à coup* (segment 27) introducing P$_b$,
  - The use of the connectors *donc, car, mais* provides an explicit indication of the coherence relations between the segments they connect.

4.2 Inventory of Temporal Cohesion Markers in the Six Texts

In the light of this contrastive analysis, we drew up an inventory of the markers of temporal cohesion used in the six texts.

Table 2.2: Inventory of temporal cohesion markers

	Text 1	Text 2	Text 3	Text 4	Text 5	Text 6
Command of Tenses **IMP** **PS** **PQP** **PC** **PRES** **FUT**	+ 6 IMP	+ 16 IMP 11 PS 1 PQP 4 PC 7 PRES	+ (but no IMP) 0 IMP 8 PS 0 0 0 11 PRES	10 IMP 10 PS 0 0 1 PRES 0	+ 7 IMP 10 PS 2 PQP 0 0 1 Pres Subj.	– 6 IMP 3 PS 0 2 PC 8 PRES 1 FUT
Connectors	–	+ car, mais (2), donc	+ et puis, et (3), soudain	+ et (3), mais (2)	+ mais (2), car (2), soudain	+ et (2), puis

	Text 1	Text 2	Text 3	Text 4	Text 5	Text 6
Framing adverbials	-	+ (5: temporal)	-	+ (3: temporal)	+ (1: temporal: une nuit	+ (3: spatio-temporal)
Temporal subordinate clauses	-	+ *quand* inverse	-	-	+ 1 with *le temps que*, 1 causal with *comme*, 1 *quand* inverse	-
Insertion of P$_a$	+	+	-	+	+	-
Insertion of P$_b$	-	+	?	+	+	-
Number of P +"	2	6	2	5	6	2

Counting the "+" in the table gives an overview of the presence or command of these markers. It also reveals two groups of texts: texts 2, 5 and 4, with a high score, on the one hand; texts 1, 3, 6, with a low score, on the other hand. The ranking can be formalized as follows, where Ti represents the score of text T:

(a) T2 = T5 > T4 > T1 = T3 = T6

4.3 Correlating the Presence of Temporal Cohesion Markers and the Degree of Temporal Coherence

Before making the inventory of markers and counting them as shown in Table 2.2, we first sorted the six texts intuitively according to their degree of temporal coherence. Here is the ranking obtained:

(b) T5 > T2 > T4 > T1 > T3 > T6

If we compare the ranking in (b) with the one obtained as a result of the inventory in section 4.2, (a), we can conclude that the inventory of the markers occurring in texts and the measure of their command helps to assess the degree of temporal coherence, at least in a first step. It is worth noting that:

- The use of temporal subordinate clauses is, in this small sample of texts, directly correlated with a good command of temporal coherence (texts 2 and 5),
- The use of connectors, explicit markers of causal or contrastive rela-

tions (*car, donc, mais*), corresponds here to a good command of co-herence (texts 2, 4, 5), while it is not case for connectors expressing a simple enumeration or temporal succession (*et, et puis, puis)* in texts 3 and 6,

- The well-balanced use of all the "story tenses" (*passé simple, imparfait, plus-que-parfait*) ensures a better temporal coherence: this is the case for text 5, and, to a lesser extent, in texts 2 and 4 where they occur with "commentary tenses" (Weinrich, 1974). In the three less coherent texts, we note, in text 1, that the only tense used is the *imparfait*, in text 3, that no *imparfait* is used, and, in text 6, we observe an unbalanced use of tenses in favor of the "commentary tenses."

4.4 Contrastive Analysis of the 5th yr Primary Texts

In order to illustrate this correlation between cohesion markers and temporal coherence, we now analyze texts 5 and 6.

- Text 5, which can be considered as the best answer to the writing in-struction, reveals, as we said, a very good command of "story tenses" and of connection tools. The only frame adverbial used, *une nuit,* in segment 7, is used in the right way to introduce the complication in the story, thus structuring the whole along the background/problem scheme. We have also pointed out the use of three connectors *mais, car, soudain,* which are respectively, argumentative, causal and narrative, as well as three temporal or causal subordinate clauses.
- Text 6, on the other hand, reveals a weaker command of tenses: event description in the *present* tense in 4, among a group of sentences in the *imparfait* in 1-5; incomplete *present/futur* narrative sequence in 11-22 ending with a *passé composé* sentence. We can also note the absence of temporal subordinate clauses. As far as connectors are concerned, the narrative connectors *puis* and *et* are used, but no causal or argumenta-tive connectors. Three spatio-temporal frame adverbials are used: *sur le chemin, au retour, sur le chemin du retour,* but their scope is limited to their host sentence and they do not really structure the text. Lastly, we have in this text a nice illustration of the fact that cohesion does not entail coherence: at first sight, it is possible to solve the anaphoras *elle* and *cette maison* in segment 5, because discourse referents of the right type, resp. "female character" and "house," are salient in segment 4. From the temporal viewpoint, segment 5 (P_a) is not a continuation of the background description, as it is in texts 1 and 5, but a kind of

backgrounding of the event described in segment 4, which is perfectly possible. But this linking process the use of the adjective "ancienne" (former) in the NP "son ancienne maison" (her former house) implies that the house referred to is no longer the protagonist's house. This contradicts the meaning of the VP *habiter dans cette maison depuis long-temps* in 5, which implies that the protagonist still lives in this house at the reference point (the event described in 4). To sum up, in this text, the insertion of P_a and P_b fail in spite of the presence of cohesion markers.

The comparison of these two texts shows that the presence of cohesion markers used in a relevant way can give rise to a coherent interpretation (text 5), but that the presence of cohesion markers is not the only condition for textual coherence (text 6).

Conclusion

This study is the first step in a contrastive analysis of a large collection of student texts responding to the same common instruction. It aims at mapping textual skills in cohesion and coherence. These skills will be compared to the ability of the same students to handle morphological spelling and to segment syntactic and graphic clauses. The aim is to develop a methodology and to put it to the test on a small number of texts in order to pave the way for an annotation campaign on a larger corpus of student texts (n = 400), with an automatic pre-annotation phase of the specific markers brought to the fore in this preliminary phase of the study.

We have listed a set of cues that can be used to assess the quality of a text with respect to cohesion and coherence: presence of a title, many elements to describe a character, compatibility between anaphoric terms and their antecedents, range and relevance of tenses, variety of temporal connectors and temporal adverbials.

The presence of these elements enables us to organize the texts in a hierarchy from more cohesive texts (5, 2, 4) to less cohesive ones (1, 3, 6). These cohesion markers need to be associated to the judgement of coherence made by the reader during the interpretation process. Is this coherence judgement correlated with the abundance of cohesive markers? The observation of this sample of texts shows that it is often the case but that the presence of cohesive ties in a text does not always guarantee its coherence.

This hierarchy in text cohesiveness does not completely correspond to the grade level: text 5 (5th yr P) is the text that appears as the most cohesive and

coherent, but the next one, text 2, is written by a 3rd yr P student, before text 4, written by a 4th yr P student. We have also observed considerable heterogeneity among students within a single grade level: among 9-year-old writers, productions vary considerably, in length, the use of a reference chain including different types of linguistic elements, the way in which the imposed sentences are integrated, and the use of tenses or framing adverbials.

These different markers have to be collected and compared in order to map the cues of textual cohesion/coherence proficiency. These observations have to be made on a larger collection of texts from each grade level concerned. The present work thus aims at preparing the annotation campaign of a corpus of hundreds of texts by students from school to university.

References

Apotheloz, D. (1995). *Rôle et fonctionnement de l'anaphore dans la dynamique textuelle.* Genève: Droz.

Asher, N., & Lascarides, A. (2003). *Logics of conversation.* Cambridge: Cambridge University Press.

Béguelin, M.-J. (1988). Anaphore, cataphore et mémoire discursive. *Pratiques*, *57*, 15-43.

Béguelin, M.-J. (1992). L'approche des "anomalies argumentatives." *Pratiques*, *73*, 51-78.

[Reichler-]Béguelin, M.-J. (1995). Alternatives et décisions lexicales dans l'emploi des expressions démonstratives. *Pratiques*, *85*, 53-87.

Benveniste, E. (1974). *Problèmes de linguistique générale II.* Paris: Gallimard.

Bras, M., Le Draoulec, A., & Asher, N. (2009). A formal analysis of the French temporal connective "alors." In B. Behrens & C. Fabricius-Hansen (Eds.), *Structuring information in discourse: The explicit/implicit dime*nsion (pp. 149-170). *Oslo Studies in Language, Vol. 1.*

Bras, M., Le Draoulec, A., Vieu, L. (2001). French adverbial *puis* between temporal structure and discourse structure, in semantic and pragmatic issues. In M. Bras & L. Vieu (Eds.), *Discourse and dialogue: Experimenting with current theories*, CRiSPI series, vol. 9 (pp. 109-146). Amsterdam: Elsevier.

Charolles, M. (1978). Introduction au problème de la cohérence des textes. *Langue Française*, *78*, 7-41.

Charolles, M. (1988). La gestion des risques de confusion entre personnages dans une tâche rédactionnelle. *Pratiques, 60*, 75-97.

Charolles, M. (1995). Cohésion, cohérence et pertinence du discours. *Travaux de linguistique*, *29*, 125-151.

Charolles, M. (1997). L'encadrement du discours—univers, champs, domaines et espace. *Cahiers de recherche linguistique*, *6*, 1-73.

Charolles, M. (2002). *La référence et les expressions référentielles en Français.* Paris: Ophrys.

Corblin, F. (1987). *Indéfini, défini et démonstratif*. Genève: Droz.

Cornish, F. (1999). *Anaphora, discourse, and understanding. Evidence from English and French*. Oxford: Oxford University Press.

Elalouf, M.-L. (Ed.). (2005). *Ecrire entre 10 et 14 ans. Un corpus, des analyses, des repères pour la formation*. Paris: Scérén, CRDP Versailles, CDDP Essonne.

Elalouf, M.-L. (2011). Constitution de corpus scolaires et universitaires: Vers un changement d'échelle. *Pratiques, 149-150*, 56-70.

Fabre-Cols, C. (2002). *Réécrire* à *l'école et au collège. De l'analyse des brouillons* à *l'écriture accompagnée*. Paris: ESF.

Frei, H. (1929). *La grammaire des fautes*. Genève: Slatkine.

Garcia-Debanc, C. (2010). Segmentation, connexion et indexation dans des productions écrites d'élèves de 9 à 13 ans de deux genres textuels. *Synergies Pays Scandinaves, 5*, 81-96.

Garcia-Debanc, C. (2013). Marques spatio-temporelles et structuration d'un texte écrit: Effets du genre et du niveau d'expertise du rédacteur. In C. Gunnarsson-Largy & E. Auriac-Slusarczyk (Eds.), *Ecriture et réécriture chez les élèves. Un seul corpus, divers genres discursifs et méthodologies d'analyse* (pp. 19-39). Louvain-la-Neuve: Academia Bruylant.

Geoffre, T. (2013). *Vers le contrôle orthographique au cycle 3 de l'école primaire*. Thèse de doctorat en Sciences du langage, spécialité Didactique et linguistique, Université de Grenoble.

Geoffre, T. (2014). Profils d'acquisition de la morphographie au cycle 3. Vers une caractérisation des parcours d'élèves? *Repères, 49*, 147-168.

Granger, S. (2007). Corpus d'apprenants, annotation d'erreurs et ALAO: Une synergie prometteuse. *Cahiers de Lexicologie, 91*, 2007-2, 115-130.

Granger S. (2009), Learner corpora. In A. Lûdeling & M. Kyto (Eds.), *Corpus Linguistics. An International Handbook* (pp. 259-275). Berlin-New York: Mouton de Gruyter.

Gunnarsson-Largy, C., & Auriac-Slusarczyk, E. (Eds.). (2013). *Ecriture et réécriture chez les* élèves. *Un seul corpus, divers genres discursifs et méthodologies d'analyse*. Louvain-la-Neuve: Academia Bruylant.

Halliday, M., & Hasan, R. (1976). *Cohesion in English*. Longman: London.

Hayes, JR, Flower, L.S (1980). Identifying the organization of writing processes. In L. W. Gregg & E. R. Steinberg (Eds.), *Cognitive processes in writing* (pp. 3-30). Hillsdale, NJ: Lawrence Earlbaum.

Kamp, H., & Rohrer, C. (1983). Tense in texts. In R. Bauerle, C. Schwarze, & A. V. Stechow (Eds.), *Meaning, Use and the Interpretation of Language* (pp. 205-269). Berlin: De Gruyter.

Leblay, C., & Auriac, E. (Eds.). (2010). *Synergies Pays Scandinaves*, *5*.

Masseron, C. (1981). La correction de rédaction. *Pratiques, 29*, 47-68.

Masseron, C., (2005). Indicateurs langagiers et stratégies scripturales. Du discours à la langue. *Pratiques*, *125-126*, 205-249.

Muller, P., Vergez-Couret, M., Prévot, L., Asher, N., Benamara, F., Bras, M., Le Draoulec, A., & Vieu, L. (2012). Manuel d'annotation en relations de discours

du projet ANNODIS, *Carnets de Grammaire*, *21*, rapport interne CLLE-ERSS. Available at http://w3.erss.univ-tlse2.fr/textes/publications/CarnetsGrammaire/carnGram21.pdf

Roubaud, M.-N., & Garcia-Debanc, C. (2014). L'approche d'"anomalies" dans des textes narratifs d'élèves de fin d'école primaire (10-11 ans). Quelques pistes pour la lecture des textes par des enseignants. In Avanzi et al. (Eds.), *Enseignement du Français: Les apports de la recherche en linguistique* (pp. 307-327). Bruxelles: Peter Lang.

Schnedecker, C. (1997). *Nom propre et chaines de référence*. Collection Recherches linguistiques, 21. Metz.Metz: Presses Universitaires.

Schneuwly, B. (1988). *Le langage* écrit *chez l'enfant: La production des textes informatifs et argumentatifs*. Paris: Delachaux et Niestlé.

Tauveron, C. (1995). *Le personnage, une clef pour la didactique du récit* à *l'école* élémentaire. Berne: Delachaux Niestlé.

Vieu, L, Bras, M., Asher, N., & Aurnague, M. (2005). Locating Adverbials in Discourse. *Journal of French Language Studies, 15*, 173-193.

Weinrich, H. (1974). *Le temps*. Paris: Seuil.